

WHAT IS CLAIMED IS:

1. An electronic device having a body and a lid comprising:
 - a spindle portion including a mechanism for supporting and permitting the lid to be
 - 5 swung in a direction that said lid is opened from a closed position where the lid is closed by folding with respect to the body;
 - a biasing mechanism provided on said spindle portion for biasing said lid in the direction that the lid is opened, thereby enabling the lid to perform an opening operation; and
 - 10 a damper mechanism for damping the opening operation of said lid, the damper mechanism being arranged to perform no damping operation during a state in which said lid, when opened, is in a range from a fully closed position to an angle less than or equal to a predetermined angle, the damper mechanism being also arranged to operate damping of the opening operation of said lid during a state in which said lid is
 - 15 opened through an angle in excess of the predetermined angle.
2. The electronic device according to claim 1, wherein said spindle portion includes a lock mechanism for holding said lid at the closed position when the lid is located at the closed position, and a release mechanism for releasing the holding of the lid by the
- 20 lock mechanism.
3. The electronic device according to claim 2, wherein said lock mechanism holds said lid at the closed position in a state in which a biasing force by the biasing mechanism is permitted to be accumulated.
- 25
4. The electronic device according to claim 2, wherein: said spindle portion includes a cam structure; said release mechanism includes a portion that is moved in response to a releasing manipulation, the release mechanism being connected to the cam structure via said portion; and the lid starts to be moved in an opening direction in
- 30 response to the releasing manipulation.
5. An opening/closing mechanism for the electronic device according to claim 1,

further comprising at least one additional spindle portion, wherein each of the biasing mechanism and the damper mechanism is provided on a different one of the spindle portions.

5 6. The electronic device according to claim 1, wherein: said damper mechanism includes an engaging mechanism; and the engaging mechanism includes a shaft that releases interlocking with said lid during a state in which the lid, when opened, is in a range from a fully closed position to an angle less than or equal to a predetermined angle and interlocks with said lid during a state in which the lid is opened through an
10 angle in excess of the predetermined angle.

7. An opening/closing mechanism for the electronic device according to claim 6, wherein: the damper mechanism includes a substantially cylindrical container filled with a viscous medium; and said shaft has a blade body in the viscous medium and is
15 rotatably supported.

8. An opening/closing mechanism for an electronic device including a body and a lid, comprising:
a spindle mechanism for supporting and permitting said lid to be swung in a
20 direction that the lid is opened from a closed position that the lid is closed by folding with respect to the body;

a biasing mechanism for biasing said lid in the direction that the lid is opened, thereby enabling the lid to perform an opening operation; and

a damper mechanism for damping the opening operation of the lid, the damper
25 mechanism being arranged to perform no damping operation during a state in which the lid, when opened, is in a range from a fully closed position to an angle less than or equal to a predetermined angle and to operate damping of the opening operation of the lid during a state in which the lid is opened through an angle in excess of the predetermined angle.

30

9. The opening/closing mechanism for an electronic device according to claim 8, further comprising: a lock mechanism for holding said lid at the closed position when

the lid is located at the closed position; and a release mechanism for releasing the holding operation by the lock mechanism.

10. The opening/closing mechanism for an electronic device according to claim 9,
5 wherein said lock mechanism holds said lid at the closed position in a state in which a biasing force by the biasing mechanism is caused to be accumulated.

11. The opening/closing mechanism for an electronic device according to claim 9,
wherein said release mechanism includes a portion that is moved in response to a
10 releasing manipulation when the releasing manipulation is performed, and said portion is connected to the lock mechanism to release the holding operation.

12. The opening/closing mechanism for an electronic device according to claim 11,
further comprising a cam structure, said portion of the release mechanism being
15 connected to the cam structure to permit the lid to start moving in an opening direction.

13. The opening/closing mechanism for an electronic device according to claim 8,
wherein the biasing mechanism comprises an elastic member, and the lid is biased due
20 to a restoration force of the elastic member.

14. The opening/closing mechanism for an electronic device according to claim 13,
wherein said elastic member comprises a coil spring.

25 15. The opening/closing mechanism for an electronic device according to claim 8,
wherein said biasing mechanism and said damper mechanism are disposed to be combined respectively with different portions of said spindle mechanism.

16. The opening/closing mechanism for an electronic device according to claim 8,
30 further comprising at least one additional spindle mechanism, wherein each of the biasing mechanism and the damper mechanism is combined with a different one of the spindle mechanisms.

17. The opening/closing mechanism for an electronic device according to claim 8,
wherein: said damper mechanism includes an engaging mechanism; and the engaging
mechanism includes a shaft that releases interlocking with said lid during a state in
5 which the lid, when opened, is in a range from a fully closed position to an angle less
than or equal to a predetermined angle, and interlocks with said lid during a state in
which the lid is opened through an angle in excess of the predetermined angle.

18. The opening/closing mechanism for an electronic device according to claim 8,
10 wherein said damper mechanism has a structure that produces a damping force by
using the viscosity of a viscous medium.

19. The opening/closing mechanism for an electronic device according to claim 17,
wherein: the damper mechanism includes a cylindrical container filled with a viscous
15 medium; and said shaft has a blade body in the viscous medium and is rotatably
supported.

20. The opening/closing mechanism for an electronic device according to claim 8,
wherein said predetermined angle is less than or equal to 90°.

20

21. The opening/closing mechanism for an electronic device according to claim 8,
wherein said electronic device is a cellular phone device having a receiver portion
provided in said lid.

22. A folding type electronic device wherein there is provided a lid that is swingable
25 with respect to a body, the electronic device characterized by comprising:

a shaft portion about which the lid is swung;

biasing means provided in said shaft portion for biasing said lid in an opening
direction, thereby causing the lid to be opened;

30 lock means for maintaining a closed position of said lid in a state in which an
elastic force of said biasing means is accumulated; and

damper means provided in said shaft portion, said damper means being arranged,

after said lock means is released, to perform free running and release damping of a biasing force of said biasing means when said lid is positioned within a predetermined opening angle range, said damper means being also arranged to perform damping of a biasing force of said biasing means when said lid is positioned outside the
5 predetermined opening angle range.

23. The electronic device according to claim 22, characterized in that said biasing means and said damper means are comprised of mutually independent components.

10 24. The electronic device as described in claim 22, characterized in that said damper means comprises: an engaging portion that is rotated in response to swinging of said lid; and a resistor member arranged to release engagement with said engaging portion and release damping of the biasing force when the lid is positioned within a predetermined opening angle range, the resistor member being also arranged to be
15 disposed in engagement with the engaging portion and perform damping of the biasing force when said lid is positioned outside the predetermined opening angle range.

25. The electronic device as described in claim 22, characterized in that the
20 predetermined opening angle range of said lid is from a fully closed state of the lid to 90°.

26. The electronic device as described in claim 24, characterized in that: said biasing means is accommodated in a substantially cylindrical housing; said resistor member
25 produces a damping force by virtue of a viscous material filled in a substantially cylindrical case; and rotation preventing means for said shaft portion is provided on outer circumferential surfaces of said housing and said case.